European Journal of Agricultural and Rural Education (EJARE)
Available Online at: https://www.scholarzest.com
Vol. 6 No. 04 April 2025
ISSN: 2660-5643

PROTECTION OF CONIFEROUS PLANTS FROM THE MAIN SUCKING PESTS IN THE REPUBLIC OF UZBEKISTAN

Zafar Nurmahmadovich Nafasov
doctor of agricultural sciences, Head of the laboratory of Quarantine and Plant Protection Research Institute, Tashkent, Repablika Uzbekistan
orcid.org/0000-0001-9569-1120, *zafar.nafasov85@gmail.com*
Obidjanov Dilshod Axmed Xuja ugli
doctor of agricultural sciences, senior researcher, Head of the laboratory of Quarantine and Plant Protection Research Institute, 111215, Tashkent, Uzbekistan
orcid.org/0009-0003-2425-9578, *dilshodobidjanov74@gmail.com*
Allayarov Nodirjon Jo`rayevich
Senior researcherof the laboratory of Quarantine and Plant Protection Research Institute, 111215, Tashkent, Uzbekistan
orcid.org/0009-0008-7950-2615, allayarovnodir78@gmail.com

Article history:
Received: 14th February 2025
Accepted: 10th March 2025

Abstract:
Applications of Attila super and, Bagira preparations consider to control the pests of conifer plants in the conditions of Uzbekistan. Optimal consumption rates products recommend to against aphids on pine trees and mealybugs on junipers.

Keywords: Juniper, pine, mealybug, pest, aphid, preparation, biological effectiveness.

INTRODUCTION.

Ornamental plants and other forest tree plantations play a significant role in the appearance of cities. Firstly, in addition to their aesthetic value, these plantings have a positive effect on the ecological situation in cities, cleaning the atmosphere from harmful impurities due to the growing population and cars. Secondly, a large number of trees prevent erosion, especially wind erosion. Thirdly, which is especially true for large cities of Uzbekistan, trees protect from the heat in the summer. Recently, parks have been increasingly developing in the cities of Uzbekistan, and landscaping and creating a favorable ecological situation in cities have been included in the national program. However, this also entails some problems, especially in the field of protecting these crops from pests and diseases. This is especially true for trees, since they are a perennial habitat for insects, which contributes to the development of harmful organisms. Measures to combat them are also complicated by the fact that the use of mass spraying of chemical plant protection products in cities is not allowed [1,2,3].

Therefore, the protection of ornamental crops and forest plantations must be constantly developed and improved, with knowledge of biology and the patterns of mass reproduction, the spread of harmful insects and pathogens of plantations. More advanced methods and means of identifying and recording foci of pests and diseases, forecasting their development and combating them must be developed.

The protection of forest crops is fundamentally different from the protection of agricultural crops, so it is necessary to use silvicultural and forestry techniques that increase the resistance of forest plantations to harmful organisms, create unfavorable conditions for the development and widespread distribution of harmful insects and diseases while simultaneously improving the habitat of useful species. These and other problems became the reason for the conclusion of the Kyoto agreements in the field of the environmental situation of the entire planet. In cities, the importance of protecting ornamental plants increases every year due to the growth of new areas of green spaces and green zones in cities. The protection of ornamental plants and especially introduced plants in botanical gardens and parks also has many features [5,6,7].

MATERIALS AND METHODS.

Standard methods of general and agricultural entomology used. The pests of conifers and their entomophages counted, and samples collected using the method of F.S.Bodenheimer and G.I.Savoyskaya, the harmfulness of the main pests determined using the method of V.I.Tansky; the species composition of pests and their economic characteristics determined according to K.M.Valiev, A.I.Vanina, A.I.Ilyinsky, I.V.Tropin, E.G.Mozolevsky, the pest population counted using the method of F.N.Semevsky. The results obtained for determining the biological efficiency calculated using the Abbott formula; the mathematical and statistical analysis of the results carried out using the method of B.A.Dospekhov.

RESULTS.

Tests of the preparations Atilla super, 10% e.c. and Bagira, 20% EC against pests of coniferous trees conducted in the Kibray district of the Tashkent region. The task determined the effectiveness with an increase in the consumption rate, since at the existing consumption rates the preparations do not fully meet the requirements for effective protection of coniferous trees from pests. The preparations tested to against aphids on pine and mealybugs on juniper.

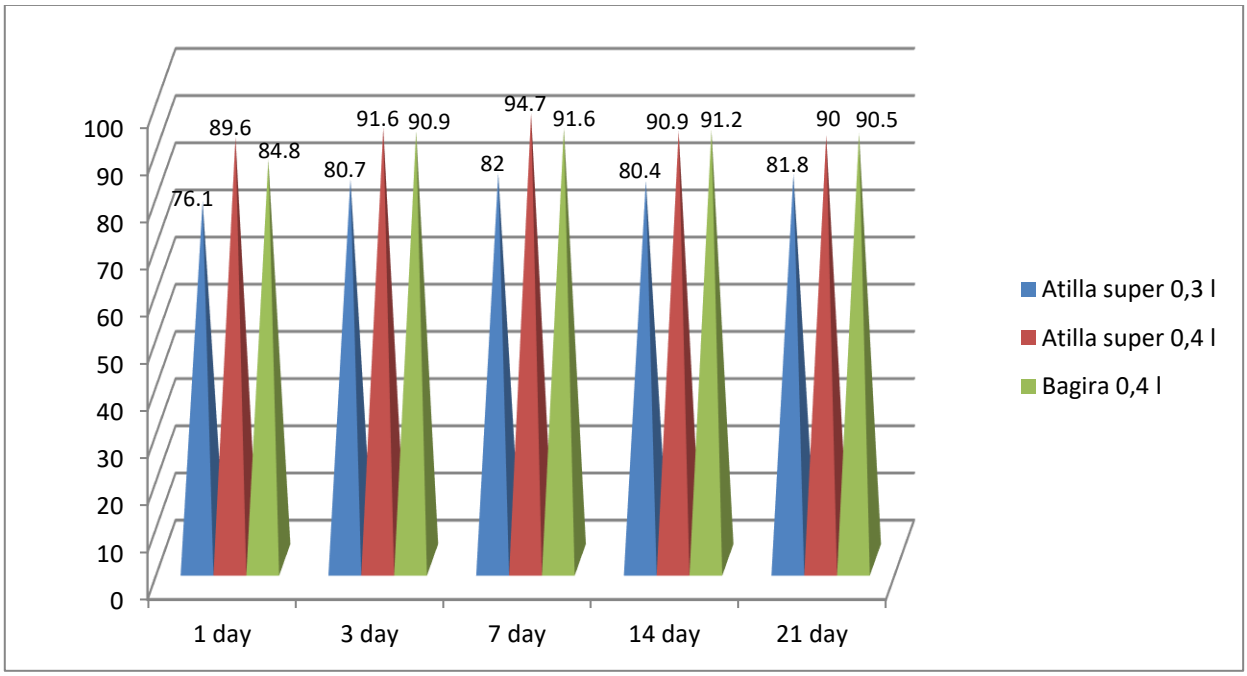
Tests of the preparations Atilla super, 10% EC and Bagira, 20% EC conducted on various ornamental crops. When treating pine against aphids with the preparation Atilla super, 10% EC at a consumption rate of 0.3 l/ha on the 1st day, the efficiency was 76.1%. And on the 3rd day it increased to 80.7%, and on the 7th day - to 82.0%, but then a drop in efficiency observed to 80.4% on the 14th day and to 79.3% on the 21st day. Although these data are at a high level, they will not ensure effective protection of coniferous plantations from aphids with a minimum frequency of treatments, which is necessary in urban conditions, so the consumption rate of the preparation Atilla super, 10% EC increased to 0.4 l/ha. Here, already on the 1st day, the efficiency was 89.6% (Picture. 1), and on the 3rd day it increased to 91.6%, then, on the 7th, 14th and 21st days, the efficiency remained at almost the same level - 94.7; 90.9 and 90.0%, respectively. Consequently, we recommend increasing the consumption rate of the Atilla super preparation, 10% e.c. against aphids on pine to 0.4 l/ha.

When treating juniper against mealybug with Atilla super, 10% e.c. at a rate of 0.4 l/ha on the 1st day, the efficiency was 76.4%, and on the 3rd; 7th, 14th and 21st days it increased to 80.6; 84.1; 85.7 and 86.4%, respectively, which ultimately could not provide an efficiency level of up to 90%. Therefore, in this experiment, the consumption rate of Atilla super, 10% e.c. increased to 0.5 l/ha, here already on the 1st day the efficiency was 88.7% and on the 3rd day already 90.7% and further only increased to 92.9% on the 7th day, 94.2% on the 14th day and 94.9% on the 21st day. Thus, it is necessary here too when treating against mealybugs on juniper to increase the consumption rate of the preparation Atilla super, 10% e.e. to 0.5 l/ha.

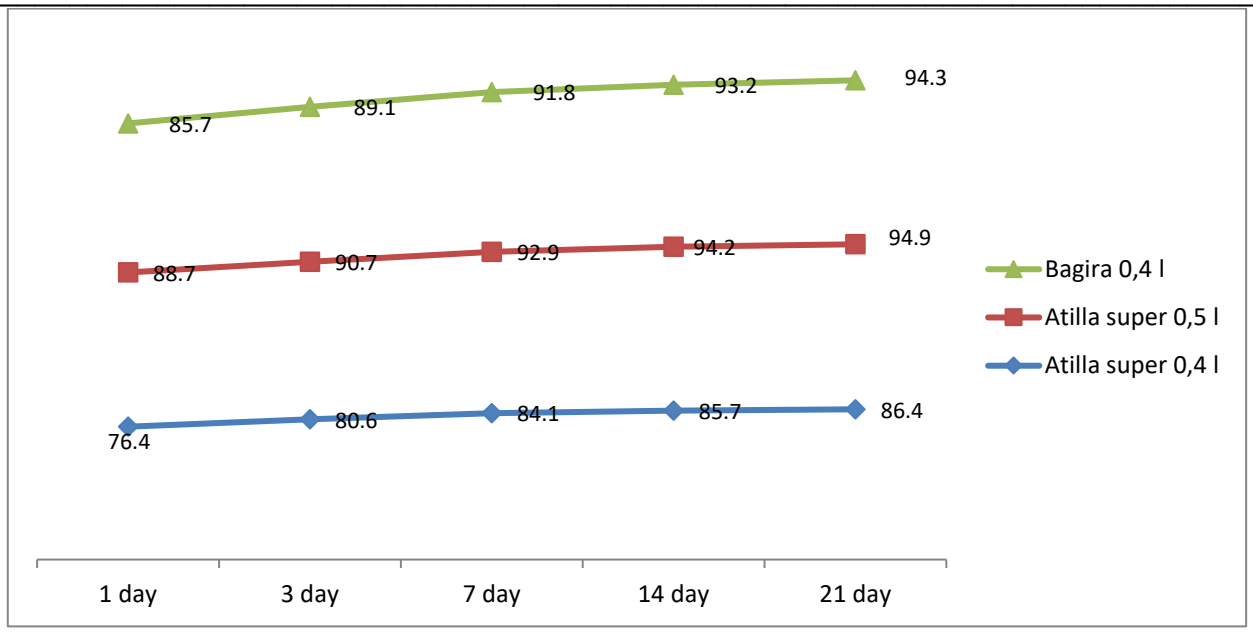
The tests carried out with the preparation Bagira, 20% ed.e. against pests of coniferous trees. The insecticide Bagira, 20% ed.e. tested against aphids on pine and juniper mealybug on juniper at a consumption rate of 0.4 l/ha. When tested against aphids on pine, on the 1st day the efficiency was 84.8%, but already on the 3rd day it increased to 90.9%, and on the 7th day to 91.6% and subsequently, on the 14th and 21st days it remained at approximately the same level - 91.2 and 90.5% (Picture. 1), respectively, but it fully provides the necessary level of protection of pines from aphids.

In the next experiment, treatments carried out against scale insects on juniper and here on the 1st day the efficiency was 85.7% (Picture. 2); then it only increased to the level of 85.7%, then it only increased to the level of 89.1% on the 3rd day; up to 91.8% on the 7th day; up to 93.2% on the 14th day; up to 94.3% on the 21st day. The efficiency level here is also almost at the same level as the reference variant with minor deviations, where the preparation Attila super, 10% ed.e., used at the rate of 0.5 l/ha, here on the 1st day the efficiency was 88.7%, and on the 3rd, 7th, 14th and 21st days - 90.7; 90.7; 92.0; 94.2 and 94.9%, respectively, from the data obtained it is clear that when treating juniper against mealybugs with the preparation Bagira, 20% e.c. at a consumption rate of 0.4 l/ha, a satisfactory degree of protection is ensured.

Thus, it can be concluded that the Attila super preparation, 10% ed.e. at the rate of 0.3 l/ha does not provide effective protection of coniferous plantations in cities from aphids and scale insects in urban conditions, the corresponding efficiency is ensured by increasing the consumption rate to 0.4 l/ha. The preparation form is easy to use, phytotoxicity at the consumption rate of the Attila super preparation, 10% ed.e. 0.4 l/ha did not detect. The Bagira preparation, 20% ed.e. showed high efficiency against aphids on pine and scale insects on juniper at the consumption rate of 0.4 l/ha. The preparation form is easy to use, quickly forms a working mixture, no phytotoxicity detected.



1 - Picture. Biological efficiency of the drug Attila super against aphids on pine (production experience, 2024-2025, Tashkent region, Kibray district)



2 - Picture. Biological efficiency of the drug Bagira against juniper mealybug on juniper (production experience, 2024-2025, Tashkent region, Kibray district)

REFERENCES:

1. Nafasov Z.N. Pests of virgin juniper and the effectiveness of chemical preparations against them// Current issues of increasing the role of scientific research institutes and higher educational institutions in increasing the efficiency of the agricultural sector of the Republic of Uzbekistan. Materials of the Scientific and Practical Conference, Book 1, - Tashkent, February 22-23, 2018. – P. 263-265.
2. Nafasov Z.N. The use of preparations Bi-58 and Imidokloprid against pests of coniferous crops in the Republic of Uzbekistan// Bulletin of science and practice. – N 4. Russia, 2018. – P.194-199.
3. Nafasov Z.N. Use of preparations against pests of agricultural crops in the Republic of Uzbekistan// Scientific protection of sustainable development of the agro-industrial complex/ Collection of materials from the International scientific-practical conference in honor of the academician of the Russian Academy of Sciences V.P. Zvolinsky and the 30th anniversary of the establishment of the Federal State Budgetary Scientific Institution "PAFNTS RAN" in Solenoe Zaymishche – 2021. – P.343 – 345.
4. Nafasov Z.N. Effectiveness of the preparation "Typhoon Plus" against leafworm and leafhopper pests of agricultural trees// Current issues in modern science. – Moscow, 2019. – N 6. – P. 138-140.
5. Nafasov Z.N., Muminov M.Sh., Suyunova G.B. Biological efficiency of preparations, primers against main diseases of boyars// Jurnal Aktualnye problemy sovremennoy nauki. – N 1, – Moscow, 2025. – P.66-70.
6. Sinadsky Yu.V., Korneeva I.T., Dobrochinskaya I.B. and dr. Pests and diseases of tsvetochno-decorative plants. - M. "Science". – 1987. – P.13-17.
7. Tereznikova E.M., Chumak P.Ya. Protection of tsvetochno-decorative plants from pests. Directory. – M.: Agropromizdat, 1989. – P.13-17.
8. Nafasov Z.N., Khalilov Q., Allayarov N.J. Application of mealybug Cryptolaemus montrouzieri Muls. In Uzbekistan against// ISSN: 2776-0979, SJIF (2022): 5.949, Volume 3, Issue 6, June, 2022. Web of Scientist: International Scientific Research Journal (WoS). Indonesia. – P.203-206.
9. Yakhyaev KH.K., Nafasov Z.N., Allayarov N.J. Ways to develop mathematical models for predicting the development of harmful organisms of forestry crops// Novateur publications JournalNX-A Multidisciplinary Peer Reviewed Journal ISSN 2581-4230. Volume 8, Issue 6, MS India. June-2022. – P.21-27.
10. Nafasov Z.N., Allayarov N.J., Muminov M.Sh, Khoshimova D.K., Arslonova N.D. Distribution, harmfulness, bioecological characteristics of decorative apple tree bark beetle (Scolytus rugulosus Muell.)// British Journal of Global Ecology and Sustainable Development. Volume-31, August, 2024. ISSN (E): 2754-9291. – P.16-19.